

System 300



WICATsystems

WICAT System 300

Developed by WICAT Systems, Inc. for educational and administrative use in schools, the System 300 supports 30 student workstations with graphics, animation, and high quality audio capabilities. Courseware, the real key to the system, covers the three basics—reading, writing, and arithmetic. Instructors can also create their own courses and lessons with the adaptable WISE courseware development system. Outside the classroom, the System 300 provides computerized administrative and scheduling packages, word processing, programming languages, and finance and payroll software. The System 300 combines a powerful computer with excellent courseware, administrative assistance, and student evaluation capabilities for less than \$3000 per student station.

PROCESSOR

- MC68000L8, 8 MHz

—approximately 1 million instructions per second
—co-processors include: ten 8088s, two 8089s, and thirty 8048s
• 16-bit processor (32-bit data operations)
• Memory management
• 20-slot chassis (proprietary architecture)

MEMORY

- 2 Mbyte/4 Mbyte parity or ECC RAM

PERIPHERALS

- Disk subsystems: 84 or 474 Mbyte SMD
- 9-track tape backup (1600/3200 bpi, 25 IPS)
- T7000 master control terminal
- 320X192 student graphics monitors (up to 30)
- High quality (CVSD) audio output
- Headphones

OPTIONS

- RS-232 port expander board (plus 1 Mbyte additional memory provides 16 additional ports for T7000 or MG8000 terminals).
- Variety of printers
- Optical scanning devices

SYSTEM SOFTWARE

- Multi-user Control System (MCS): A realtime, multi-user, multi-tasking operating system
- Language support: APL, Assembler, BASIC, C, COBOL, FORTRAN77, and Pascal
- Applications: WISE (Authoring System), Reading K-3 (with audio), Reading Comprehension 2-10, Math K-6, Math Games, Math 7-8, Individualized Educational Plan (IEP), Admin, Financial and Payroll, Word Processing, UltraCalc, and Sequitur (relational database management).
- Fall 1983 Applications: Writing 4-6, Spelling 4-6 (with audio), French I (with audio)
- Future Applications: Algebra, ESL, Elementary Science, Language Arts, and Geometry

System 300 Hardware Specifications

ENVIRONMENTAL

Safety

Designed to meet UL 478 (EDP) and 114 (office equipment), and CSA 154 (EDP) and 143 (office equipment) requirements.

EMI

Complies with FCC Rules and Regulations, Part 15, Subpart J, Class A.

Temperature

Operating	50 to 85° F	10 to 29° C
Idle	-40 to 140° F	-40 to 60° C

Operating Altitude

10,000 ft. 3,000 m.

Operating Humidity (noncondensing)

20 to 80%

Physical Dimensions (three-quarter bay)

Height	59 in.
Width	22.5 in.
Depth	34 in.
Weight	400-500 lb.

CPU CHASSIS

Size

Height	23 in.
Width	17.5 in.
Depth	30 in.
Weight	50 lb.

Electrical

Frequency	60 Hz
Voltage	110
Watts	600

Timing

CPU	8 MHz
Bus	Proprietary
Serial Ports (RS-232)	50-19.2 Kbaud

84 Mbyte SMD DISK SUBSYSTEMS

Size

Height	10.5 in.
Width	19 in.
Depth	26 in.
Weight	40 lb.

Electrical (input power)

Frequency	50-60 Hz
Voltage	110/220
Watts	300

Specifications

Winchester size	8 in.
Capacity	
Unformatted	84 Mbytes
Formatted	76 Mbytes
Access time	
Track to track	5 ms.
Average	20 ms.
Maximum	40 ms.
Transfer rate	1.229 Mbyte/sec.
Rotation	3600 rpm
MTBF	10,000 hours

474 Mbyte SMD DISK SUBSYSTEMS

Size

Height	10.5 in.
Width	19 in.
Depth	26 in.
Weight	140 lb.

Electrical (input power)

Frequency	50-60 Hz
Voltage	110/220
Watts	600

Specifications

Winchester size	10.5 in.
Capacity	
Unformatted	474 Mbytes
Formatted	421 Mbytes
Access time	
Track to track	5 ms.
Average	18 ms.
Maximum	35 ms.
Transfer rate	1.859 Mbyte/sec.
Rotation	3961 rpm
MTBF	10,000 hours

9-TRACK TAPE DRIVE

Physical

Height	8.7 in.
Width	19 in.
Depth	25 in.
Weight	80 lb.

Electrical

Frequency	50-60 Hz
Voltage	110/220
Watts	300

Specifications

Recording density	1600/3200 bpi
Tape speed	25 ips
Transfer rate	160K Bytes/sec.
Capacity	
1/2-inch mag. tape	(2,400 ft. tape)
Unformatted	46 Mbyte
Formatted	37 Mbyte
MTBF	(4 Kbytes/block) 5500 hours

STUDENT GRAPHICS MONITORS

Physical Size

Height	11 in.
Width	16.5 in.
Depth	12 in.

Graphics resolution

320X192 pixel

Electrical (input power)

Frequency	60 Hz
Voltage	110
Watts	40

Specifications

Characters per line	40
Screen size	12 in.
Phosphor	P31 green
Black and White	

AUDIO SPECIFICATIONS

Vocabulary Memory (averages 800 words at a time)	1 Mbyte
Output bandwidth	30 to 3 KHz
Number of headsets	30
Speech sample rate	24,000 bps

System Software

EDUCATIONAL COURSEWARE

Reading Skills K-3

In Reading K-3, a computer-processed voice responds to student answers. Students complete lessons on the alphabet, the 500 most common words in elementary reading vocabulary, an expanded vocabulary beyond elementary reading, and paragraph comprehension.

Reading Comprehension 2-10

Reading Comprehension provides mock newspaper articles for students to analyze. Students work on a variety of reading exercises that require them to answer questions based on what they infer from the article, identify and delete any irrelevant or superfluous sentences, interpret tables and other non-textual information, and identify the thesis and evaluate support for it.

Math K-6

WICAT's Math K-6 series provides extensive drill and practice, while a sophisticated manager tracks student progress and automatically increases or decreases the level of difficulty. Level A (grades K-2) covers addition, subtraction, and whole numbers. Level B (grades 3-4) focuses on the same math areas as level A plus multiplication, division, and fractions. Level C (grades 5-6) takes in all of level B and adds instruction on decimals.

Math Games

Five math games integrate the math materials, allowing students to choose from several levels of difficulty. Each game uses drill and practice activities that require the student to use a variety of mathematical processes in problem solving.

Math 7-8

Drill and practice exercises in Math 7-8 cover all areas up to algebra. This math program is unique in that it provides pre-lesson instruction before the student performs the practice exercises. Extensive graphics and animation allow visual reinforcement of key concepts. Topics covered include fractions, decimals, numeration, ratios, proportions, percents, pre-algebra, geometry, measurement, probability and statistics.

WISE

WISE is a courseware development system that allows the nonprogrammer to use text and graphics editors as well as instructional design features to create sophisticated instructional programs. WISE eliminates the need for an intermediary programmer to develop computer-operated lessons on any subject.

Speech Editor

The System 300 Speech Editor provides a simple method for creating and updating speech libraries. Words and phrases up to 10 seconds long may be entered by microphone into a speech library. From the libraries the archived spoken words can be sent to any of the student monitors.

FALL 1983 APPLICATIONS

Writing 4-6

WICAT's writing program uses a unique method involving four areas of concentration: 1) **Touch typing**—graphics are used to show students correct finger placement on standard typewriter keyboards. Students then practice what they have learned and play games that will increase their typing speed. 2) **Creative writing**—prewriting exercises use graphics to encourage students to develop story ideas. For instance, in one exercise, students see drawings of several objects and are instructed to write a story about them. 3) **Word Processor**—students complete writing exercises using a word processor specially designed for them. 4) **Sentence combining**—several short sentences are provided which the student must first combine into one. Students then use the combined sentences to create a story.

Spelling 4-6

The Spelling 4-6 program records word lists and subdivides the lists by grade levels. Students, after hearing a word used in a sentence, are required to spell the word. If the student misspells the word, it goes back into the file for a second try. Students also receive printouts of the words they have mastered and the words that require more study.

French I

Designed for grades 7-9, French I supplements classroom work using dialogue lessons and pattern drills covering grammar, vocabulary, phrases and basic French concepts. Students participate in entertaining dialogue and respond to questions, while immediate feedback and on-line help features provide additional assistance. In addition, students work crossword puzzles as an entertaining review.

ADMINISTRATIVE SOFTWARE

ADMIN

ADMIN (Administrator's Management Information Network) maintains complete student and personnel files, schedules courses and arranges student schedules, keeps attendance records and reports, and produces grade reports.

Individualized Education Plan (IEP)

Designed for special education students, the Individualized Education Plan reports on student performance levels and records specific goals and objectives for each student. IEP also records suggestions for the best teaching methods based on the student's background and personality. A unique feature of this program is a flexible report writer that allows the user to customize reports.

Financial

WICAT's Financial software performs accounting functions specifically for educational use. These functions include general ledger, general journal, history reports, and warrant reports. The financial package also supports systems for purchase orders, invoices, vendors, and personnel.

Financial and Payroll

The Financial and Payroll package includes the capabilities of the Financial software as well as payroll functions covering earnings, deductions, and pay plans.

Office Information System (OIS) Word Processing*

This flexible word processing system, with editing and formatting capabilities, includes pagination, search and replace, automatic page numbering, cut and paste, right justification, and other essential functions.

UltraCalc

UltraCalc, a versatile electronic worksheet, allows you to manipulate and analyze tabular data using graphs, automatic recalculations, 15-digit arithmetic, and advanced math functions. These features simplify economic forecasting, trend analysis, and other computations.

Sequitur*

This relational database management and word processing system is totally screen-oriented and offers fully integrated editing and fully relational data manipulation. Sequitur also provides unprecedented versatility for entering data; generating reports, forms, and mailing lists; and using word processing to manage documents.

*WICAT's OIS derives from software developed by R-Systems, Inc.

*Squitur is a trademark of Pacific Software Manufacturing Co.